

What is claimed is:

1. A method for treating refractory material composed of fireclay, light-weight refractory bricks, silimanite bricks, zirconium and zirconium-containing bricks, and fusion-cast bricks with compositions of  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$  and/or  $\text{MgO}$  or  $\text{CrO}$ , the  
5 surface of which is preferably in contact with a glass melt  
wherein  
the surface of the material is treated by laser radiation.
2. The method as recited in Claim 1,  
wherein  
10 the surface of the refractory material is heated by the laser radiation to at least  $2000^\circ\text{C}$ .
3. The method as recited in Claim 1 or 2,  
wherein  
an energy density of 2 to 4 W per  $\text{mm}^2$  is introduced into the surface.
4. The method as recited in one of the Claims 1 through 3,  
15 wherein  
the laser treatment is carried out with an effective exposure time of 0.1 to 5 s.
5. The method as recited in one of the Claims 1 through 4,  
wherein  
the surface is treated using a laser beam with a feed rate of 1-10 mm/s, while the laser  
20 beam on the surface has a diameter of 2-5 mm.
6. The method as recited in one of the Claims 1 through 5,  
wherein  
a laser beam with a wavelength in the range of 9 to 11  $\mu\text{m}$  is used.
7. The method as recited in one of the Claims 1 through 6,  
25 wherein  
a  $\text{CO}_2$  laser is used.
8. The method as recited in one of the Claims 1 through 7,

wherein

the surface is sprayed with a powder or a solution before or during the laser treatment, or the ceramic body is infiltrated with a solution that contains the zirconium-containing and/or aluminium-containing compounds.

- 5 9. The method as recited in one of the Claims 1 through 8,  
wherein  
the refractory material is tempered after the laser treatment.

10. Refractory material composed of fireclay, light-weight refractory bricks, silimanite bricks, zirconium and zirconium-containing bricks, and fusion-cast bricks with  
10 compositions of  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$  and/or  $\text{MgO}$  or  $\text{CrO}$ , the surface of which is preferably in contact with a glass melt, characterized by a surface treated by laser radiation.

11. The refractory material as recited in Claim 10,  
wherein  
15 the refractory material (1a) has a vitreous surface layer (1b).

12. The refractory material as recited in one of the Claims 10 or 11,  
wherein  
the surface layer (1b) has a thickness of 100 to 1000  $\mu\text{m}$ .

13. The refractory material as recited in one of the Claims 10 through 12,  
20 wherein  
zirconium-containing and/or aluminum-containing compounds are located in the surface layer (1b).

14. The use of a refractory material as recited in one of the Claims 10 through 13 for making furnaces, Danner blowpipes, for feeder channels and/or for drawing dies.

- 25 15. An apparatus for manufacturing and/or processing glass melts that includes the components in contact with the glass melt, the components being composed of refractory material composed of fireclay, light-weight refractory bricks, silimanite bricks, zirconium and zirconium-containing bricks, and fusion-cast bricks with compositions of

$\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$  and/or  $\text{MgO}$  or  $\text{CrO}$ ,

wherein

the refractory material includes a surface treated by laser radiation.

16. The method for manufacturing and/or processing glass melts,

5 wherein

the glass melt is in contact with surfaces of refractory material composed of fireclay, light-weight refractory bricks, silimanite bricks, zirconium and zirconium-containing bricks, and fusion-cast bricks with compositions of  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$  and/or  $\text{MgO}$  or  $\text{CrO}$  that have been treated by laser radiation.